Curriculum Vita

GEORGE J. MORIDIS

ADDRESS

Office: *Lawrence Berkeley National Laboratory, Bldg. 90-1116*
Earth Sciences Division, Department of Hydrology and Reservoir Dynamics, MS 90-1116
1 Cyclotron Rd, Berkeley, CA 94720 - Phone: (510) 486 4746

Home: *1707 Trestle Glen Rd., Oakland, CA 94610 - Phone: (510) 832 0829*

EDUCATION

Graduate

Jan. 1983 - 1987
Ph.D. in Reservoir Engineering
Texas A&M University, College Station, Texas 77843

1980 - Dec. 1982
M.Sc. in Agricultural Engineering
Texas A&M University, College Station, Texas 77843

1979-1980
M.E. in Chemical Engineering
National Metsovion Technical University, Athens 10233, GREECE

Undergraduate

1975-1979
B.Sc. (Honors) in Chemical Engineering
National Metsovion Technical University, Athens 10233, GREECE

EXPERIENCE

Nov. 1991 to present

Deputy Program Lead for Energy Resources (Sept. 2009 to present)
Research Area Leader, Transport and Thermodynamics (2003 to Sept. 2009)
Group Leader, Contaminant Hydrology (1997 to 2003)
Group Leader, Subsurface Containment Technologies (1993 to 1997)
Staff Scientist

Lawrence Berkeley National Laboratory, University of California
Earth Sciences Division, Hydrology and Reservoir Dynamics Department

Visiting Professor*, Petroleum Engineering Dept., Texas A&M University, College Station, Texas, USA (2006 to present)*
Adjunct Professor*, Chemical Engineering Dept., Colorado School of Mines, Golden, Colorado, USA (2003 to present)*
Visiting Professor, *Guangzhou Center for Gas Hydrate Research, Guangzhou Institute for Energy Conversion, Chinese Academy of Sciences, China (2009 to present)*
Adjunct Professor, *Petroleum and Natural Gas Engineering Dept., Middle East Technical University, Ankara, Turkey (2005 to present)*

- Overall project leader and LBNL PI of the largest projects awarded by RPSEA on Unconventional Gas Resources in (a) 2008 ($2.64M over 3 years), "**A Self-Teaching Expert System for the Analysis, Design and Prediction of Gas Production from Unconventional Gas Resources**"; a collaboration of LBNL (lead institution), Texas A&M University (Dr. Tom Blasingame, Petroleum Engineering Dept.) and the University of Houston (Dr. Michael Nikolaou, Chemical Engineering Dept.), and (b) 2009 ($2.9M over 3 years),), "**Coupled Flow-**

Geophysical-Geomechanical-Geochemical (F3G) Analysis of Tight Gas Production"; a collaboration of LBNL (lead institution), Texas A&M University (Dr. Tom Blasingame, Petroleum Engineering Dept.) and Stanford University (Dr. Mark Zoback, Geophysics Dept.)

- Hydrate program coordinator and Principal Investigator (PI) of three hydrate projects funded by the National Energy Technology Laboratory of DOE (FY2000 to present), involving numerical simulations and laboratory experiments. In charge of numerical design and analysis of the first field test of gas production from a hydrate deposit, conducted by an international scientific consortium at the Mallik site, Northwest Territories, Canada in early 2002. Responsible for the design and analysis of a planned field test of gas production from permafrost hydrate deposits at the Mount Elbert site, to be conducted by BP Exploration (Alaska). In charge of laboratory studies for (a) the development of techniques for the production of large hydrate samples (pure and in porous media), (b) the non-destructive study of dissociation of artificial and natural hydrate-bearing cores using CT technology, (c) the study of relative permeability and kinetic hydrate dissociation (processes that are critical to gas production from hydrates), (d) the determination of key parameters describing hydrate behavior in porous media through history-matching of laboratory and field experiments.
- PI of a DOE-sponsored project on the interrelationship between global climate and hydrate dissociation in oceanic accumulations (collaboration with Climate Group of the Los Alamos national Laboratory).
- PI of a new (mid-2009) project sponsored by ConocoPhillips, which investigates the behavior of composite CH_4-CO_2 hydrates through numerical simulations and laboratory experiments.
- Main developer of the TOUGH+ family of codes, the next generation of LBNL simulators for the simulation of fluid flow and transport in complex geologic media (a LDRD-funded project). The TOUGH+ family of codes is written in FORTRAN 95/2003, and their architecture is based on the principles of object-oriented programming.
- Developer of the TOUGH+HYDRATE code (scalar and parallel versions) for the simulation of hydrate dissociation and overall behavior in porous media. This code incorporates the most recent advances in hydrate science, and is used for the design and analysis of field tests and laboratory experiments of hydrate dissociation. A scientific panel convened by the National Academy of Sciences to review the DOE hydrates program (the funding agency supporting the code development) and report to Congress indicated that TOUGH+HYDRATE is "… *a small project with a major technological impact*" that *"… incorporates the best independently measured physical property data into a fundamental reservoir model*". Since its release in April 2005, TOUGH+HYDRATE is being used by 25 organizations (in 15 countries) conducting hydrate research.
- PI of a NASA-funded project that aims to describe the thermal and fluid flow effects of a radioactive-fueled heat source buried in the Martian permafrost.
- In charge of the radionuclide transport studies (solutes and colloids) for the Yucca Mountain High-Level Radioactive Waste Repository. Main author of Yucca Mountain Modeling Report U060 (*Radionuclide Transport Under Ambient Conditions*), which provides support for the Repository Licensing Application process.
- Developer of the EOS9nT model (a member of the TOUGH2 family of codes) for the simulation of transport of radioactive solutes and colloids in the subsurface (used for all the Yucca Mountain studies).
- Developer of a new generation of conjugate gradient solvers, included in the most recent versions of the TOUGH2 family of codes.
- PI of the project *"Containment of Contaminants Through Physical Barriers from Viscous Liquids Emplaced Under Controlled Viscosity Conditions",* funded by the Subsurface Contamination Focus Area, Office of Technology Development of DOE. The project completed a successful pilot-scale field test in January 1995, and a medium-scale field demonstration (scheduled for FY 1997 at the Brookhaven national Laboratory) is currently being designed.
- PI of two other containment projects: (a) Testing Barrier Liquids (funded by DuPont) and (b) Repair of Landfill Closure Caps Using Barrier Liquids (funded by the Savannah River Site)
- PI of a LDRD project on a new generation of ferrofluids (fluids with special magnetic

properties) for subsurface remediation and monitoring.

- In charge of numerical simulation of fate and transport of contaminants in support of the remediation effort at LBNL.

April 1989 to October 1991

Research Engineer

Groundwater Research Program, WERC #205
Agr. Engineering Dept. & Civil Engineering Dept. (joint appointment)
Texas A&M University
Water Resources & Environmental Engineering, WERC #205
Civil Engineering Dept., Texas A&M University (April 1989 - Aug. 1990)

In charge of the project *"Synthesis of Pneumatic and Hydraulic Controls for Hazardous Site Remediation,"* which involved air barriers to control the migration of contaminants in the subsurface. Designed and developed the largest-in-the-world dual gamma-dual energy X-ray attenuation experimental facility (with a scanning area of 6'x7') to investigate basic phenomena of multi-phase flow through porous media, focusing on contamination containment and the evaluation of decontamination methods.

Developed (a) a family of new numerical methods, the Laplace Transform Finite Difference (LTFD) , Finite Element (LTBE), and Boundary Element (LTBE) methods for flow and solute transport simulations, (b) 3-D, full two- and three-phase flow numerical models, used to describe the processes involved in groundwater contamination & decontamination, (c) a computer image analysis system for automatic aquifer parameter identification, and (d) a new matrix solver for multi-phase problems, the MEPC-D4 , which reduces the computer time requirements by 50% to 82.5% and storage by 50%. Licenses and copyrights for items (a) through (d) have been awarded or are pending.

Feb. 1987 to April 1989

Associate Engineer/Senior Scientist

International Rice Research Institute (United Nations - FAO)
Dept. of Water Management, P.O. Box 933, 1099 Manila, PHILIPPINES

In charge of research programs in South and South-East Asia (Philippines, India, Pakistan, Malaysia, Thailand, Vietnam) and supervising a staff of 32. Responsible for (a) the development of hydraulic barriers to alleviate salt water intrusion into the main aquifer supplying Ho-Chi-Minh City (Saigon), and (b) the design of the groundwater development plan for the Terrai area of Nepal. Other responsibilities included (1) experiments on, and (2) development and testing of numerical simulation models for (a) water and vapor flow in rice soils, (b) large-scale (regional) groundwater flow and contaminant transport, (c) irrigation & drainage, (d) groundwater contamination by agricultural chemicals, and (e) drainage of acid sulphate soils.

1980-1987

Research/Teaching Assistant

Texas Water Resources Institute & Dept. of Agricultural Engineering
Texas A&M University, College Station, Texas 77843

Taught hydraulics, hydraulic engineering, flow through porous media, and thermodynamics for 5 years. Developed multi-dimensional fully implicit numerical models for (a) Single-phase flow, (b) Multi-phase flow , (c) Simultaneous mass and heat flow , and (d) Miscible contaminant transport in porous media.

1979-1980

Chemical Engineer

Greek National Atomic Energy Commission
Nuclear Research Center "Democritus", Aghia Paraskevi 17643, GREECE

Conducted research on the reaction kinetics of gamma-irradiated human hormonal solutions (a NATO-sponsored project).

Summer 1979 **Chemical Engineer Trainee**
Radfontein Mining Corporation, Newcastle, SOUTH AFRICA

Member of an operation research team analyzing possibilities for secondary platinum extraction from mine slag.

Summer 1978 **Chemical Engineer Trainee**
Egyptian Salt and Soda Corporation, Muharambay, Alexandria, EGYPT

Helped with the design, installation, operation and maintenance of an ion exchange and an electrolysis system.

RESEARCH GRANTS & AWARDS

Career total: **$16,647,000** (April 1989- December 30, 2009)

FY 2008 Awards:
TOTAL = $3,647,000 ($1,010,000 from DOE, $2,637,000 from RPSEA)
FY 2009 Awards (October 1, 2008 – May 1, 2009):
TOTAL = $4,775,000 ($175,000+480,000+360,000 from DOE; $35,000+810,000 from ConocoPhillips; $15,000 from CUG – China; $2,900,000 from RPSEA)
FY 2010 Awards (October 1, 2009 – December 30, 2009):
TOTAL = $685,000 (165,000+$335,000+185,000 from DOE)

GRADUATE STUDENTS (Chair/Co-chair of Student's Committee)

PhD's:	*Arvind Gupta:*	Chemical Engineering, Colorado School of Mines, 2007
	Tarun Grover:	Petroleum Engineering, Texas A&M University, 2008
MSc's:	*Doruk Alp*:	Petroleum Engineering, Middle East Technical University, 2007
	Anastasios Boulis:	Petroleum Engineering, Texas A&M University, 2008
	Matt Freeman:	Petroleum Engineering, Texas A&M University, May 2010 (expected)
	Sonia Jam:	Petroleum Engineering, Texas A&M University, May 2010 (expected)

HONORS, RECOGNITIONS & AWARDS

2009-2010: *Society of Petroleum Engineers*: **Distinguished Lecturer**
2009: *Goldschmidt Conference*, June 21-26, Davos, Switzerland: **Keynote Speaker**
2009: Western Regional Meeting, March-24-26, San Joe, California*, Society of Petroleum Engineers*: **Keynote Speaker**
2007: Editorial Board of *Water Resources Research*: **Outstanding Reviewer Award**
2006: International Oil and Gas Conference and Exhibition, 5-7 December, Beijing, *Society of Petroleum Engineers*: **Invited Speaker**
2006: *Lawrence Berkeley National Laboratory*: **Outstanding Performance Award** for contributions to the establishment and development of a hydrate research program at LBNL.
2006: *Lawrence Berkeley National Laboratory*: **Excellence in Technology Transfer** award, for the development of the TOUGH+ family of codes.
2005: Editorial Board of *Water Resources Research*: **Outstanding Reviewer Award**
1996: *Popular Science* magazine: **Best of What's New** award (which honors the 100 most promising new technologies), for the development of the subsurface barrier technology.
1995: *Lawrence Berkeley National Laboratory*: **Outstanding Performance Award** for contributions to the establishment and development of a subsurface barrier research program.

OTHER PROFESSIONAL ACTIVITIES

Long-term appointments to Program Committees of Conferences of Professional Organizations:

Offshore Technology Conference (OTC): Member of advisory board to the SME member of the OTC Program Committee
Arctic Technology Conference (ATC): Program Committee Member, representing SME to the ATC

Organizing Committees (member), Conferences of the *Society of Petroleum Engineers (SPE)* and/or *the Society for Mining, Metallurgy & Exploration (SME)*:

- **2010 SPE Latin American and Caribbean Petroleum Engineering Conference (LACPEC)**, Lima, Peru, 30 November – 3 December
- **2010 Canadian Unconventional Resources and International Petroleum Conference (CURIPC)**, Calgary, Alberta, Canada, 19-21 October
- **2010 SPE Unconventional Gas Conference,** Pittsburgh, Pennsylvania, 23-25 February
- **2010 SPE Western Regional Meeting,** Anaheim, California, 27-29 May
- **2010 Ninth International Oil & Gas Conference and Exhibition in China (IOGCE),** Beijing, China, 8-10 June (Session Chair, Unconventional Resources)
- **2009 International Conference on CO_2 Capture, Storage, and Utilization,** San Diego, California, 2–4 November
- **2009 SPE Latin American and Caribbean Petroleum Engineering Conference (LACPEC),** Cartagena, Colombia, 31 May – 3 June
- **2008 SPE Tight Gas Development and Planning Workshop,** Hangzhou, China, 15-18 June

Organizer and Conference Chair:

- **2009 TOUGH Symposium**, 14–16 September, Berkeley, California

Organizer and Session Chair:

- **2010 Offshore Technology Conference**, 3–6 May, Houston, Texas (4 sessions)
- **2008 Offshore Technology Conference**, 4–8 May, Houston, Texas (4 sessions)

AFFILIATIONS

Professional

American Geophysical Union
American Society of Agricultural Engineers
American Institute of Chemical Engineers
American Society of Civil Engineers,
American Society of Petroleum Engineers
Association of Ground Water Scientists and Engineers, NWWA
Society for Industrial and Applied Mathematics
Society for Mining, Metallurgy and Exploration (OTC Board Member, ATC Board Member)

REVIEWING/EDITING

Transport in Porous Media (Associate Editor; Guest Editor of Special Issues)
Journal of Natural Gas Science and Engineering (Associate Editor)
Water Resources Research
Journal of Geophysical Review
Journals of the Society of Petroleum Engineering (Member of the Editorial board)
Journals of the American Society of Civil Engineers
Journal of Petroleum Science and Engineering
Nuclear Technology (Guest Editor of Special Issues)
Journal of Contaminant Hydrology (Elsevier)
Journal of Hydrology (Elsevier)
Energy and Fuels (American Chemical Society)
Journal of Physical Chemistry
Proceedings of the National Academy of Sciences
American Mineralogist
Computers & Geosciences (Guest Editor of Special Issues)
Journal of Canadian Petroleum Technology
ChemSusChem
Industrial and Engineering Chemistry Research
Journal of Marine and Petroleum Geology

PUBLICATION LIST

2009

JOURNAL PAPERS

J-046 Reagan, M.T., and G.J. Moridis, *Large-Scale Simulation of Methane Hydrate Dissociation along the West Spitsbergen Margin*, **Geophysical Review Letters, 36**, L23612, (doi: 10.1029/2009GL041332, LBNL-2908E, 2009).

J-045 Moridis, G.J., T.S. Collett, R. Boswell, M. Kurihara, M.T. Reagan, C. Koh and E.D. Sloan**,** *Toward Production From Gas Hydrates: Current Status, Assessment of Resources, and Simulation-Based Evaluation of Technology and Potential***, SPE Reservoir Evaluation & Engineering**, **12**(5): 745-771, 2009 (October 2009 issue, SPE-114163-PA. doi: 10.2118/114163-PA).

J-044 Gupta, A., G.J. Moridis, T.J. Kneafsey, and E.D. Sloan, *Modeling pure methane hydrate dissociation using a numerical simulator from a novel combination of X-ray computed tomography and macroscopic data*, **Energy & Fuels***, In press* (December 2009 issue, doi: 10.1021/ef9006565).

J-043 Walsh, M.R., S.H. Hancock, S.J. Wilson, S.L. Patil, G.J. Moridis, R. Boswell, T.S. Collett, C.A. Koh and E.D. Sloan, *Preliminary report on the commercial viability of gas production from natural gas hydrates*, **Energy Economics, 31**(5): 815-823, 2009 (September 2009 issue, doi**:** 10.1016/j.eneco.2009.03.006).

J-042 Boswell, R., D. Shelander, M. Lee, T. Latham, T. Collett, G. Guerin, G. Moridis, M. Reagan and D. Goldberg, *Occurrence of gas hydrate in Oligocene Frio sand: Alaminos Canyon Block 818: Northern Gulf of Mexico*, **Journal of Marine and Petroleum Geology, 26**(8): 1499-1512, 2009 (September 2009 issue, doi:10.1016/j.marpetgeo.2009.03.005).

J-041 Moridis, G.J., M.T. Reagan, S.-J. Kim, Y. Seol and K. Zhang, *Evaluation of the Gas Production Potential of Marine Hydrate Deposits in the Ulleung Basin of the Korean East Sea*, **SPE Journal***, In press* (doi: 10.2118/110859-PA).

J-040 Rutqvist, J., and G.J. Moridis, *Numerical studies on the geomechanical stability of hydrate-bearing sediments*, **SPE Journal***,* **14**(2): 267-282, 2009, SPE-126129-PA. (June 2009 issue, doi: 10.2118/126129-PA).

J-039 Rutqvist, J., G.J. Moridis, T. Grover, and T. Collett, *Geomechanical response of permafrost-associated hydrate deposits to depressurization-induced gas production*, **Journal of Petroleum Science and Engineering**, 67:1-12, 2009 (July 2009 issue, doi: 10.1016/j.petrol.2009.02.013).

2009

REPORTS, CONFERENCE PAPERS & ARTICLES

R-146 Reagan, M.T., and G.J. Moridis, *Large-Scale Simulation of Arctic Oceanic Gas Hydrate Dissociation in Response to Climate Change*, *In Review*, **Geophysical Research Letters**.

R-145 Moridis, G.J., and M.T. Reagan, *Estimating the Upper Limit of Gas Production From Class 2 Hydrate Accumulations in the Permafrost*, *In Review*, **Journal of Petroleum Science and Engineering**.

R-144 Moridis, G.J., M. Kowalsky, and K. Pruess, *TOUGH+HYDRATE v1.1 User's Manual: A code for the Simulation of System Behavior in Hydrate-Bearing Geologic Media*, LBNL-00XXXE, 2009.

R-143 M. Kowalsky, S. Finsterle, E. Gasperikova, G.J. Moridis, and S.S. Hubbard, *Hydrogeophysical Approaches with the TOUGH Family of Codes*, LBNL-2790E, 2009.

R-142 Zhang, K., G.J. Moridis, and K. Pruess, *TOUGH+CO2: A Multiphase Fluid Flow Simulator for CO2 Geologic Sequestration in Saline Aquifers*, Proceedings, TOUGH Symposium 2009, Lawrence Berkeley National Laboratory, 14-16 Sept. 2009 (LBNL-2790E, 2009).

R-141 Reagan, M.T, G.J. Moridis, and K. Zhang, *Large-Scale Simulation of Oceanic Gas Hydrate Dissociation in Response to Climate Change*, Proceedings, TOUGH Symposium 2009, Lawrence Berkeley National Laboratory, 14-16 Sept. 2009 (LBNL-2790E, 2009).

R-141 Reagan, M.T, G.J. Moridis, and K. Zhang, *Large-Scale Simulation of Oceanic Gas Hydrate Dissociation in Response to Climate Change*, Proceedings, TOUGH Symposium 2009, Lawrence Berkeley National Laboratory, 14-16 Sept. 2009 (LBNL-2790E, 2009).

R-140 Reagan, M.T, G.J. Moridis, and K. Zhang, *Large-Scale Simulation of Oceanic Gas Hydrate Dissociation in Response to Climate Change*, Proceedings, TOUGH Symposium 2009, Lawrence Berkeley National Laboratory, 14-16 Sept. 2009 (LBNL-2790E, 2009).

R-139 Freeman, C.M., G.J. Moridis, D. Ilk and T. Blasingame*, A Numerical Study of Microscale Flow Behavior in Tight Gas and Shale Gas Reservoir Systems*, Proceedings, TOUGH Symposium 2009, Lawrence Berkeley National Laboratory, 14-16 Sept. 2009 (LBNL-2790E, 2009).

R-138 Freeman, C.M., G.J. Moridis, D. Ilk and T. Blasingame, *A numerical study of performance for tight gas and shale gas reservoir systems,* Paper SPE 124961, presented at the 2009 SPE Annual Technical Conference and Exhibition, New Orleans, Louisiana, October 4-7, 2009 (to be submitted for publication in the journal **SPE Reservoir Evaluation and Engineering**).

R-137 Wu, Y.S., Moridis, G.J., B. Bai, and K. Zhang, *A multi-continuum model for gas production in tight fractured reservoirs,* Paper SPE 118944, presented at the 2009 SPE Hydraulic Fracturing Technology Conference, January 19-21, 2009.

R-136 Moridis, G.J., S. Silpngarmlert, M.T. Reagan, T.S. Collett, and K. Zhang, *Gas Production From a Cold, Stratigraphically Bounded Hydrate Deposit at the Mount Elbert Site, North Slope, Alaska,* paper submitted for publication in the **Journal of Marine and Petroleum Geology**.

2008

JOURNAL PAPERS

J-038 Reagan, M.T., and G.J. Moridis, *The dynamic response of oceanic hydrate deposits to ocean temperature change*, 113, C12023, **Journal of Geophysical Research: Oceans** (doi: 10.1029/2008JC004938, LBNL-01026E, 2008).

J-037 Finsterle, S., C. Doughty, M.B. Kowalsky, G.J. Moridis, L. Pan, T. Xu, Y. Zhang, and K. Pruess, *Advanced Vadose Zone Simulation Using TOUGH*, **Vadose Zone Journal**, 7:601-609, 2008 (doi: 10.2136/vzj2007.0059).

2008

REPORTS, CONFERENCE PAPERS & ARTICLES

R-135 Moridis, G.J., M. Kowalsky and K. Pruess, *TOUGH+HYDRATE v1.0 User's Manual: A code for the Simulation of System Behavior in Hydrate-Bearing Geologic Media*, LBNL-00149E, 2008.

R-134 Grover, T., G.J. Moridis and S. Holditch, *Analysis of Reservoir Performance of the Messoyakha Hydrate Reservoir,* Paper SPE 114375, presented at the 2008 SPE Annual Technical Conference and Exhibition, Denver, Colorado, September 21-24, 2008.

R-133 Rutqvist, J., and G.J. Moridis*, A Numerical Model for Analysis of Geomechanical Performance of Hydrate-Bearing Sediments*, paper ARMA 08-139, presented the 42nd U.S. Rock Mechanics Symposium, American Rock Mechanics Association, San Francisco, California, June 29-July 2, 2008.

R-132 Reagan, M.T., and Moridis, G.J., *The dynamic response of oceanic hydrate deposits to ocean temperature change*, LBNL-01026E, 2008.

R-131 Boswell, R., D. Shelander, M. Lee, T. Latham, T. Collett, G. Geurin, G. Moridis, M. Reagan and D. Goldberg, *Occurrence of gas hydrate in Oligocene Frio sand: Alaminos Canyon Block 818: Northern Gulf of Mexico*, LBNL-0000E, 2008 (published in the **Journal of Marine and Petroleum Geology**, Sept. 2009 issue, doi:10.1016/ j.marpetgeo.2009.03.005)

R-130 Anderson, B.J., J.W. Wilder, M. Kurihara, M.D. White, G.J. Moridis, S.J. Wilson, M. Pooladi-Darvish, Y. Masuda, T.S. Collett, R.B. Hunter, H. Narita, K. Rose and R. Boswell, *Analysis Of Modular Dynamic Formation Test Results From The Mount Elbert-01 Stratigraphic Test Well, Milne Point Unit, North Slope Alaska,* paper presented at the 6th International Conference on Gas Hydrates,Vancouver, British Columbia, Canada, July 6-10, 2008.

R-129 Reagan, M.T., and G.J. Moridis, Modeling of oceanic gas hydrate instability and methane release in response to climate change, paper presented at the 6th International Conference on Gas Hydrates, Vancouver, British Columbia, Canada, July 6-10, 2008.

R-128 Rutqvist, J., and G.J. Moridis, Geomechanical Response of Known Permafrost Hydrate Deposits to Depressurization and Thermal Loading, paper presented at the 6th International Conference on Gas Hydrates, Vancouver, British Columbia, Canada, July 6-10, 2008.

R-127 Wilder, J.W., G.J. Moridis, S.J. Wilson, M. Kurihara, M.D. White, Y. Masuda, B.J. Anderson, T.S. Collett, R.B. Hunter, H. Narita, M. Pooladi-Darvish, K. Rose and R. Boswell, An International Effort to Compare Gas Hydrate Reservoir Simulators, paper presented at the 6th International Conference on Gas Hydrates, Vancouver, British Columbia, Canada, July 6-10, 2008.

R-126 Zhang, K., and G. Moridis, *A Domain Decomposition Approach for Large-Scale Simulations of Coupled Processes in Hydrate-Bearing Geologic Media,* paper presented at the 6th International Conference on Gas Hydrates, Vancouver, British Columbia, Canada, July 6-10, 2008.

R-125 Moridis, G.J., M.T. Reagan and K. Zhang, *The Use of Horizontal Wells in Gas Production From Hydrate Accumulations*, paper presented at the 6th International Conference on Gas Hydrates,Vancouver, British Columbia, Canada, July 6-10, 2008.

R-124 Gullapalli, I., G.J. Moridis, S. Silpngarmlert, B. Reik, M. Kamal, E. Jones and T.Collett, *Designing a Reservoir Flow Rate Experiment for the GOM Hydrate JIP Leg II LWD Drilling*, paper presented at the 6th International Conference on Gas Hydrates, Vancouver, British Columbia, Canada, July 6-10, 2008.

R-123 Rutqvist, J., and G.J. Moridis, *Coupled Hydrologic, Thermal and Geomechanical Analysis of Well Bore Stability in Hydrate-Bearing Sediments,* Paper OTC 19572, 2008 Offshore Technology Conference, Houston, Texas, May 5-8, 2008 (in review, for publication in the **SPE Journal)**.

R-122 Kowalsky, M., S. Nakagawa, and G.J. Moridis, *Feasibility of Monitoring Gas Hydrate Production with Geophysical Methods,* Paper OTC 19489, 2008 Offshore Technology Conference, Houston, Texas, May 5-8, 2008 (in review, for publication in the SPE Journal**)**.

R-121 Reagan, M.T., G.J. Moridis and K. Zhang, *Sensitivity Analysis of Gas Production from Oceanic Hydrate Deposits*, Paper OTC 19433, 2008 Offshore Technology Conference, Houston, Texas, May 5-8, 2008 (in review, for publication in the **SPE Reservoir Evaluation and Engineering)**.

R-120 Moridis, G.J., M.T. Reagan and K. Zhang, *On the Performance of Class 2 and Class 3 Hydrate Deposits During Co-Production With Conventional Gas*, Paper OTC 19435, 2008 Offshore Technology Conference, Houston, Texas, May 5-8, 2008 (in review, for publication in the **SPE Reservoir Evaluation and Engineering)**.

R-119 Moridis, G.J., T.S. Collett, R. Boswell, M. Kurihara, M.T. Reagan, C. Koh and E.D. Sloan**,** *Toward Production From Gas Hydrates: Current Status, Assessment of Resources, and Simulation-Based Evaluation of Technology and Potential***,** Invited Paper SPE 114163, (LBNL 00161E), 2008 Unconventional Reservoirs Conference, February 11-13, Keystone, Colorado.

2007

JOURNAL PAPERS & BOOK CHAPTERS

J-036 Reagan, M.T., and G.J. Moridis, *Oceanic Gas Hydrate Instability and Dissociation Under Climate Change Scenarios*, **Geophysical Research Letters,** 34, L22709, 2007 – doi:10.1029/2007GL031671

J-035 Moridis, G.J., M. Kowalsky and K. Pruess, *Depressurization-Induced Gas Production From Class 1 Hydrate Deposits*, **SPE Journal of Reservoir Evaluation & Engineering,** 10(5), 458-481, 2007.

J-034 Moridis, G.J., and M. Kowalsky, *Response of Oceanic Hydrate-Bearing Sediments to Thermal Stresses*, **SPE Journal**, 12(2), 253-268, 2007 (SPE 111572-PA, OTC-18193, LBNL-60150, 2006)

J-033 Moridis, G.J., and E.D. Sloan, *Gas Production Potential of Disperse Low-Saturation Hydrate Accumulations in Oceanic Sediments*, **Journal of Energy Conversion and Management, 48(**6**),** 1834-1849, 2007 – doi: 10.1016/j.enconman.2007.01.23 **(**LBNL-52568, 2006).

J-032 Kowalsky, M.B., and Moridis, G.J., *Comparison of Kinetic and Equilibrium Reaction Models in Simulating the Behavior of Gas Hydrates in Porous Media*, **Journal of Energy Conversion and Management,** 48**(6),** 1850-1863, 2007 – doi: 10.1016/j.enconman.2007.01.017 (LBNL-60361, 2006).

J-031 Alp, D., M. Parlaktuna, and Moridis, G.J., *Gas Production by Depressurization From Hypothetical Class 1G and Class 1W Hydrate Reservoirs*, **Journal of Energy Conversion and Management, 48(**6**),** 1864-1879, 2007 – doi: 10.1016/j.enconman.2007.01.009.

J-030 Kneafsey, T., L. Tomutsa, G.J. Moridis, Y. Seol, B. Freifeld, C.E. Taylor and A. Gupta, *Methane Hydrate Formation and Dissociation in a Partially Saturated Core-Scale Sand Sample*, **Journal of Petroleum Science and Engineering**, 56, 108-126, 2007 – doi: 10.1016/j.petrol.2006.02.002 (LBNL-59088, 2006).

2007

REPORTS, CONFERENCE PAPERS & ARTICLES

R-118 Moridis, G.J. and M.T. Reagan, *Gas Production From Class 2 Hydrate Accumulations in the Permafrost*, Paper SPE 110858, 2007 SPE Annual Technical Conference and Exhibition, Anaheim, California, U.S.A., 11–14 November 2007 (in Review, for publication in the SPE Journal Reservoir Engineering and Evaluation).

R-117 Moridis, G.J., M.T. Reagan, S.-J. Kim, Y. Seol and K. Zhang, *Evaluation of the Gas Production Potential of Marine Hydrate Deposits in the Ulleung Basin of the Korean East Sea*, Paper SPE 110859**,** 2007 SPE Asia Pacific Oil & Gas Conference and Exhibition held in Jakarta, Indonesia, 30 October–1 November 2007.

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R-115 Moridis, G.J., and M.T. Reagan, *Gas Production From Oceanic Class 2 Hydrate Accumulations*, paper OTC-18866, 2007 Offshore Technology Conference, Houston, Texas, 30 April – 3 May 2007 (LBNL-62757, in Review, for publication in the SPE journal Reservoir Engineering and Evaluation).

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